



February 21, 2020

Mr. Brian Mitchell
EPA Project Manager
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Subject: **CERCLA Assessment Trip Report**
Downtown Wells Site and Former Electrolux Site, Jefferson, Iowa
U.S. EPA Region 7 START 5, Contract No. 68HE0719D0001
Task Order No. 19F0086.003
Task Monitor: Brian Mitchell, EPA Project Manager

Dear Mr. Mitchell:

Tetra Tech, Inc. is submitting the attached Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Assessment Trip Report regarding sampling activities at the Downtown Wells Site and Former Electrolux Site in Jefferson, Iowa. If you have any questions or comments, please contact the START Project Manager at (816) 412-1770.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ryan Slanczka'.

Ryan Slanczka
START Project Manager

A handwritten signature in blue ink, appearing to read 'Ted Faile'.

Ted Faile, PG, CHMM
START Program Manager

Enclosures

CERCLA ASSESSMENT TRIP REPORT
DOWNTOWN WELLS SITE AND FORMER ELECTROLUX SITE
JEFFERSON, IOWA

Superfund Technical Assessment and Response Team (START) 5

Contract No. 68HE0719D0001, Task Order 19F0086.003

Prepared For:

U.S. Environmental Protection Agency
Region 7
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February 21, 2020

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CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 DESCRIPTIONS AND BACKGROUNDS OF THE SITES.....	3
2.1 LOCATIONS/DESCRIPTIONS OF THE SITES	3
2.2 OPERATIONAL AND INVESTGATIVE HISTORIES OF THE SITES.....	3
3.0 CERCLA ASSESSMENT ACTIVITIES	5
3.1 FORMER ELECTROLUX SITE INVESTIGATION ACTIVITIES.....	5
3.2 DOWNTOWN WELLS PRELIMINARY ASSESSMENT ACTIVITIES	6
3.2.1 Groundwater Sampling Site Selection	7
3.2.2 Temporary Monitoring Well Installation and Groundwater Sampling.....	9
3.2.3 Quality Assurance/Quality Control Sampling	11
3.2.4 Decontamination	11
3.2.5 Investigation-Derived Waste	11
4.0 ANALYTICAL DATA SUMMARY	12
4.1 GROUNDWATER SAMPLES	12
4.2 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING.....	12
5.0 DEVIATIONS FROM THE QAPP	14
6.0 CONCLUSIONS.....	15
7.0 REFERENCES	17

APPENDICES

Appendix

A	FIGURES
B	FIELD LOGBOOK
C	PHOTOGRAPHIC LOG
D	EPA ANALYTICAL DATA
E	BORING LOGS
F	MONITORING WELL RECORD FORM
G	BUILDING PERMIT APPLICATION

CONTENTS (Continued)

TABLES

<u>Table</u>		<u>Page</u>
1	SUMMARY OF SAMPLES, DOWNTOWN WELLS SITE, JEFFERSON, IOWA	10
2	SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED IN SAMPLES DOWNTOWN WELLS SITE, JEFFERSON, IOWA	13

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division tasked Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START), under contract number 68HE0719D0001, Task Order 19F0086.003, to conduct Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Assessment activities, including a Preliminary Assessment (PA) of the Downtown Wells Site and a Site Investigation (SI) of the Former Electrolux Site, in Jefferson, Iowa (see Figure 1, Appendix A). The volatile organic compound (VOC) *cis*-1,2-dichloroethene (DCE) has been identified in three of four municipal water supply wells in the downtown area. This VOC is a common degradation product of the common industrial solvent trichloroethene (TCE) and the dry cleaning solvent tetrachloroethene (PCE).

As directed by the Sub-Task Modification under contract number 68HE0719D0001, Task Order 19F0086.003, the Tetra Tech team developed a Quality Assurance Project Plan (QAPP) for the PA and SI activities (Tetra Tech 2019). This trip report summarizes implementation of the QAPP, conveying site background information, field sampling techniques, and analytical results from the EPA Region 7 laboratory. Submittals of the PA and SI reports will occur after completion of additional CERCLA Assessment activities.

The purpose of the CERCLA Assessment was to determine presence or absence of contaminants at these sites. Analytical data from the CERCLA Assessment will be used to determine whether further evaluation at each site would be warranted.

Primary components of PA and SI tasks were as follows:

Preliminary Assessment

- Conduct a historical review of the community and local industry/commercial business, provide maps, and review site files.
- Determine the six most likely sites to have contributed to contamination found in Jefferson municipal drinking water wells 4, 6, and 9.
- Install direct-push technology (DPT) temporary monitoring wells within city right-of-ways next to each of the six sites, and collect groundwater samples therefrom.
- Submit groundwater samples to the EPA Region 7 laboratory for VOC analysis.

Site Investigation

- By use of rotary sonic technology, install a 2-inch permanent monitoring well (MW-3) to depth of approximately 160 feet below ground surface (bgs) within the city right-of-way near the Former Electrolux Plant.
- Collect a groundwater sample from the permanent monitoring well.
- Submit the groundwater sample to the EPA Region 7 laboratory for VOC analysis.

During November 11 through 13, 2019, START Project Manager (PM) Ryan Slanczka, assisted by START Members (SM) geologists Lauren Murphy and Kaylee Thomas, conducted CERCLA Assessment activities. Iowa Department of Natural Resources (IDNR) Environmental Specialist Matthew Graesch was on site during this investigation. Brian Mitchell was the EPA PM and Task Monitor. START documented CERCLA Assessment activities in a field logbook (see Appendix B) and photographic log (see Appendix C).

2.0 DESCRIPTIONS AND BACKGROUNDS OF THE SITES

Section 2.0 specifies locations of the Downtown Wells Site and Former Electrolux Site, describes the sites, and recounts operational and investigative histories related to the sites.

2.1 LOCATIONS/DESCRIPTIONS OF THE SITES

The Downtown Wells Site is at the intersection of Elm Street and Monroe Street in Jefferson, Greene County, Iowa, with the 10-year capture zone of the downtown Jefferson municipal drinking water wells forming the informal boundary of this site (see Figure 1, Appendix A). The Downtown Wells Site includes four Jefferson municipal drinking water wells screened at total depths of approximately 150 feet bgs in the Pleistocene Sand and Gravel Unit. Drillers' logs for these water wells indicate that the sand and gravel aquifer is typically encountered from about 100 to 150 feet bgs, and is overlain by glacial till. This aquifer is localized to a buried alluvial channel and overlies Pennsylvanian Cherokee Group bedrock consisting of interbedded shale, coal, and limestone (IDNR 2013).

The Former Electrolux Site is the former Electrolux property at 601 East Central Street in Jefferson, Greene County, Iowa. This site is within the southeast quarter of Section 5, Township 83 North, Range 30 West (see Figure 1, Appendix A). The former manufacturing area occupies approximately 7.5 acres of the approximately 20.75-acre parcel zoned for industrial use (Greene County, Iowa Assessor's Office 2016).

2.2 OPERATIONAL AND INVESTGATIVE HISTORIES OF THE SITES

The approximately 21-acre Former Electrolux site previously included a 75,500-square-foot facility that manufactured dishwasher motor transmissions from 1960 until it was decommissioned in March 2011. The former manufacturing building was demolished, and the facility now includes a 7.5-acre area of concrete building slabs, parking lots, fencing, and sidewalks where manufacturing activities previously occurred. In 2010, Electrolux began to evaluate potential subsurface contamination derived from manufacturing activities. A phased site assessment approach was followed from 2010 through 2013 to assess facility subsurface conditions downgradient of and in areas exterior to the former manufacturing facility. Additional groundwater monitoring occurred in 2014, and Golder Associates, Inc. (Golder) completed a Site Assessment and Summary Report that included a conceptual site model in October 2016 (Golder 2016).

Results from the site assessments indicate that soil and groundwater in the former manufacturing area are contaminated with chlorinated VOCs (CVOC), primarily TCE and its breakdown products.

Contamination was identified within 0 to 40 feet bgs, within the upper tills. CVOC-impacted soils were found only within the footprint of the former facility and adjacent landscaped areas within 1 to 7 feet bgs. Highest concentrations of CVOC contaminants in groundwater were detected in the yellow brown till within approximately 30 to 40 feet bgs near the southeast portion of the former facility. The October 2016 Site Assessment report concluded that natural attenuation and chlorinated degradation were occurring in the former manufacturing area, and that the extent of contamination was within the Electrolux property boundary. Sources of VOC contamination at the former manufacturing area are believed to be former manufacturing operations within the eastern portion of the facility (Golder 2016).

An investigation completed in April 2017 included collection of groundwater samples by use of a DPT drilling rig. Four groundwater samples were collected off the Former Electrolux Site at 30- and 50-foot depths at two temporary wells downgradient (south) of the approximate manufacturing area boundary. The sampling apparatus was unable to reach the two planned lower target collection depths of 120 and 150 feet bgs, encountering clay refusal at approximately 77 feet bgs. No VOC was detected in any sample collected during the sampling event (Toeroek 2017).

An additional investigation completed in May 2018 included installation of two permanent monitoring wells downgradient of the former facility. The monitoring wells were installed to depths of 98 feet bgs (MW-1) and 133 feet bgs (MW-2) by use of sonic rotary technology. The wells were screened from 88 to 98 feet bgs (MW-1) and 123 to 133 feet bgs (MW-2), and groundwater samples were collected by use of low flow QED Micropurge equipment. Facility-related VOCs were not detected in any sample collected during the sampling event; however, minor amounts of chloroform were detected at concentrations below its maximum contaminant level (MCL) (Toeroek 2018).

Groundwater in the following Jefferson municipal drinking water wells was found to contain DCE: Well 4 (~150 feet total depth, 30 feet of screen from 120 to 150 feet bgs), Well 6 (160 feet total depth, 15 feet of screen from ~142 to 157 feet bgs), and Well 9 (159 feet total depth, screen depth unknown). Documents obtained from the Jefferson Water Department Source Water Protection Plan indicate that the southwest portion of the former Electrolux plant is within the 10-year capture zone of four of the Jefferson municipal drinking water wells (Tetra Tech 2016).

3.0 CERCLA ASSESSMENT ACTIVITIES

During November 11 through 13, 2019, START conducted CERCLA Assessment activities as part of a PA of the Downtown Wells Site and an SI of the Former Electrolux Site. The purpose of the CERCLA Assessment was to determine presence or absence of contaminants at the sites. On November 8, 2019, the City of Jefferson approved START's Building Permit Application to install monitoring wells within City of Jefferson right-of-ways. On November 12, 2019, the City of Jefferson provided the approved Building Permit Application (see Appendix G) to START PM Ryan Slanczka. Mr. Slanczka and SM geologists Lauren Murphy and Kaylee Thomas mobilized to Jefferson on November 10, 2019, and subsequently were joined on site by IDNR Environmental Specialist Matthew Graesch during November 11 through 12, 2019.

The following sections describe CERCLA Assessment activities. A site-specific field logbook is in Appendix B, and photographic documentation is in Appendix C.

3.1 FORMER ELECTROLUX SITE INVESTIGATION ACTIVITIES

EPA tasked START to install a 2-inch permanent monitoring well (MW-3) to approximately 160 feet bgs within the city right-of-way near the former Electrolux facility. The well boring was to be drilled by use of rotary sonic technology. Upon installation and development of MW-3, START would collect a groundwater sample to be submitted for VOC analysis at the EPA Region 7 laboratory.

On November 11, 2019, START and IDNR personnel met START's rotary sonic drilling subcontractor, Cascade Drilling, L.P. (Cascade) of Schofield, Wisconsin, led by field team lead Paul Dickinson. The meeting, which commenced SI activities, occurred near the proposed boring location, at a vacant gravel lot south of and adjacent to the Jefferson City Water Plant.

Well drilling activities occurred during November 11 through 12, 2019. The boring for MW-3 was within the city right-of-way approximately 60 feet east of North Cedar Street and 450 feet north of the Union Pacific Railroad (42°1'27.55" N, 94°22'9.03" W) (see Figure 2, Appendix A). This boring was advanced entirely via rotary sonic technology by use of a Gus Pech® truck-mounted rotary sonic drill rig equipped with a 4-inch-diameter core barrel with 6-inch-diameter override; total boring depth was 115 feet bgs. The drilling method allowed collection of continuous soil cores, which were extruded into polyethylene sleeves in 10-foot intervals, for logging. Top and bottom of each sleeve, and boring depths were marked on each sleeve.

On November 12, 2019, advancement of the boring for MW-3 reached an approximate depth of 105 feet bgs, where the lithology of the strata, having been primarily clay, sand, and till, transitioned to shale bedrock. The encountered shale layer remained consistent through further boring advancement to 115 feet bgs. The Pleistocene Sand and Gravel Unit, within which the screened interval of the monitoring well was to be installed, was not encountered above the Pennsylvanian shale bedrock during advancement of the boring for MW-3. Based on lithological observations of soil cores of drill cuttings, Ms. Murphy, Ms. Thomas, and Mr. Graesch concluded that the boring for MW-3 had not intersected any stratum likely capable of producing a quantity of groundwater adequate for sampling purposes, and also that such a stratum would not likely be encountered through further advancement of the boring. Based on this determination and absence of the Pleistocene Sand and Gravel Unit, and with approval from the EPA PM and Task Monitor Brian Mitchell, Mr. Slanczka directed Cascade to discontinue well installation activities and begin abandonment of MW-3.

Well abandonment occurred during November 12 through 13, 2019, and accorded with appropriate state regulations. As part of well abandonment activities, the installed well casing for MW-03 was completely removed from the borehole. Cetco 0.375-inch bentonite pellets were used to backfill the clean borehole from its bottom to approximately 1 foot bgs via tremie pumping, and a Portland cement and bentonite grout mixture was used to fill the remaining 1 foot of the borehole.

Observations and data acquired from soil cores of drill cuttings were documented in boring logs (see Appendix E). Well installation and abandonment information was documented in the Monitoring Well Record Form (see Appendix F) filed with IDNR.

3.2 DOWNTOWN WELLS PRELIMINARY ASSESSMENT ACTIVITIES

EPA tasked START to conduct a historical review of the community and local industry/commercial business, provide maps, and review site files in order to determine the six sites most likely to have contributed to the contamination found in the Jefferson municipal drinking water wells 4, 6, and 9. START would then install and collect groundwater samples from DPT temporary monitoring wells within city right-of-ways next to each of the six sites. Groundwater samples would be submitted for VOC analysis at the EPA Region 7 laboratory in Kansas City, Kansas.

On November 12, 2019, START PM Ryan Slanczka met Below Ground Surface, Inc. (BGS) of Lawrence, Kansas, led by field team lead Craig Hewins, at the location of temporary monitoring well GW-01 to commence DPT activities. BGS installed temporary monitoring wells and START collected groundwater samples during November 12 through 13, 2019.

The QAPP called for collection of groundwater samples from six temporary monitoring wells at approximate depths of 35, 45, and 65 feet bgs; however, in each temporary monitoring well, refusal was encountered at depths between 38 and 66 feet bgs. In temporary monitoring wells GW-01, -02, -03, -05, and -06, the target 65-foot sampling depth could not be reached. In temporary monitoring wells GW-02 and -03, the target 45-foot sampling depth could not be reached. Additionally, only two of the six temporary monitoring wells yielded groundwater for sample collection (GW-03 between 15 and 38 feet bgs and GW-06 between 22 and 51 feet bgs). A site-specific field logbook is in Appendix B, and photographic documentation is in Appendix C.

3.2.1 Groundwater Sampling Site Selection

On September 18, 2019, Tetra Tech conducted a search of the EPA EnviroMapper for Envirofacts and Envirofacts online tools to identify and review facilities with listed environmental interests (including air releases, toxic releases, hazardous wastes, water discharge permits, Toxic Release Inventory [TRI] facility reports, Resource Conservation and Recovery Act [RCRA] facility information, and Superfund sites) located within the 10-year capture zone of contaminated Jefferson municipal drinking water wells 4, 6, and 9 (EPA EnviroMapper 2008). Excluding the former Electrolux facility, the online tool identified seven facilities within the capture zone. These seven facilities (with the Chicago Rivet Company and the former site of Battles Auto Repair considered as one site cluster due to proximity) were selected as the six sites most likely to have contributed to the contamination found in Jefferson municipal drinking water wells 4, 6, and 9. Locations of temporary monitoring wells for groundwater sampling were subsequently selected based on the selected sites' hydraulic positions relative to Jefferson municipal drinking water wells 4, 6, and 9.

The selected sites likely to have contributed to the contamination found in Jefferson municipal drinking water wells 4, 6, and 9 were as follows:

Midwest Dry Cleaning

RCRA facility information lists Midwest Dry Cleaning, at 113 South Chestnut Street, as a drycleaning and laundry services company. Temporary monitoring well GW-01 was approximately 40 feet south-southwest of this site.

Alliant Energy

RCRA facility information lists Alliant Energy, at 205 South Vine Street, as an electrical power generation, transmission, and distribution; and natural gas distribution company. On November 12, 2019, during a meeting to discuss underground utilities near the proposed location of temporary monitoring well

GW-02, Jefferson Water Department officials stated that the Alliant Energy building occupied one of the vacant lots north of Jefferson municipal drinking water well 9. Based on images obtained from Google Earth, the former Alliant Energy building (42° 0'49.20"N, 94°22'32.78"W) was approximately 20 feet north of the Jefferson municipal drinking water well 9, approximately 55 feet north-northeast of the location of Alliant Energy obtained from RCRA facility information, and was demolished sometime between 2012 and 2015 (Google 2020). Temporary monitoring well GW-02 was approximately 50 feet northeast of the location of Alliant Energy obtained from RCRA facility information, and approximately 14 feet south of the location of Alliant Energy displayed in images obtained from Google Earth. Figure 2 in Appendix A shows the location of Alliant Energy obtained from RCRA facility information.

Jefferson Redemption Center

RCRA facility information lists the Jefferson Redemption Center, at 207 West Lincoln Way Avenue, as a recyclable material wholesaler. Temporary monitoring well GW-03 was approximately 330 feet south of this site.

A-1 Service Center

RCRA facility information lists the A-1 Service Center, at 216 East State Street, as a general automotive body, paint, and interior repair and maintenance company. Temporary monitoring well GW-04 was approximately 45 feet west-southwest of this site.

Chicago Rivet Company

A TRI facility report lists the Chicago Rivet & Machine Company, at 208 East Central Street, as a bolt, nut, screw, rivet, and washer manufacturing company in the fabricated metals industry, with use of copper, zinc compounds, copper compounds, and hydrochloric acid. Temporary monitoring well GW-05 was approximately 250 feet south of this site.

Former Site of Battles Auto Repair

RCRA facility information lists the former site of Battles Auto, at 303 East Central Street, as a general automotive repair and maintenance company. Temporary monitoring well GW-05 was approximately 200 feet west-southwest of this site, and temporary monitoring well GW-06 was approximately 220 feet east-southeast of this site.

American Concrete Products Inc.

ICIS-Air facility information lists American Concrete Products Inc., at 407 East Central Street, as a ready-mix concrete manufacturing company that generates particulate matter at sizes less than or equal to 10 micrometers. Temporary monitoring well GW-06 was approximately 200 feet west of this site.

3.2.2 Temporary Monitoring Well Installation and Groundwater Sampling

From November 12 through 13, 2019, START collected six groundwater samples at temporary monitoring well locations GW-03 and -06 (see Appendix A, Figure 3). The remaining temporary monitoring wells at GW-01, -02, -04, and -05 did not yield any groundwater for sampling. DPT equipment refusal was encountered at 38 feet bgs (GW-03) and 51 feet bgs (GW-06), above the deeper targeted collection depths. Samples were collected only at shallower depths where groundwater was encountered.

Groundwater samples were collected from DPT-advanced temporary monitoring wells by use of a Geoprobe® Screen Point 16 groundwater sampler. Groundwater was collected through disposable polyethylene tubing fitted with a check valve (i.e., inertial pump method). Samples were collected at greatest depth, with subsequent raising of the sampler to the upper depth interval. Prior to collection of a sample at a given depth, approximately three tubing volumes (or 1 gallon of water) was purged by use of a bottom check valve. Samples were collected directly into laboratory-provided sample containers. Pertinent data, including sample locations and analyses to be performed, were recorded on field sheets (see Appendix D).

The groundwater sampler and rods were decontaminated following sampling at each location, and new disposable polyethylene tubing was used at each location. After completion of sampling, each DPT borehole was plugged with Cetco 3/8" bentonite pellets, and a Portland cement and bentonite grout mixture was used to make the borehole flush with the surrounding paved surfaces.

Each of the six groundwater samples was collected for analysis for VOCs into three 40-milliliter (mL) volatile organic analysis (VOA) vials preserved with hydrochloric acid (HCl). The sample vials were labelled and packaged accordingly, and then placed in a cooler maintained at or below a temperature of 4 degrees Celsius (°C) until submitted for analysis to the EPA Region 7 laboratory on November 14, 2019, under Analytical Services Request 8420. Table 1 summarizes sample locations, identification numbers, depths, and laboratory analyses.

TABLE 1
SUMMARY OF SAMPLES
DOWNTOWN WELLS SITE, JEFFERSON, IOWA

Boring Location	EPA Sample ID	Date	Time	Depth Interval (ft bgs)	Latitude (°N), Longitude (°W)	Potential Source Area	Analyses
GW-01	N/A	N/A	N/A	N/A	42.014559, 94.373337	Midwest Dry Cleaning	N/A
GW-02					42.013528, 94.375843	Alliant Energy	
GW-03	8420-1	11/13/2019	10:00	34-38	42.014230, 94.376740	Jefferson Redemption Center	VOCs
	8420-1-FD	11/13/2019	10:00	34-38			
	8420-2	11/13/2019	11:00	24-28			
	8420-3	11/13/2019	11:30	15-19			
GW-04	N/A	N/A	N/A	N/A	42.016307, 94.372567	A-1 Service Center	N/A
GW-05					42.025548, 94.372203	Chicago Rivet Company & Former Site of Battles Auto Repair	
GW-06	8420-4	11/13/2019	15:20	47-51	42.025592, 94.370767	American Concrete Products Inc. & Former Site of Battles Auto Repair	VOCs
	8420-5	11/13/2019	15:40	37-41			
	8420-6	11/13/2019	16:00	22-26			
Trip Blank	8420-20-FB	11/13/2019	12:00	N/A	N/A	N/A	VOCs
Field Blank	8420-21-FB	11/13/2019	13:00				
Rinsate blank	8420-22	11/13/2019	16:12				

Notes:

°N Decimal degrees North
 °W Decimal degrees West
 EPA U.S. Environmental Protection Agency
 FD Field duplicate
 ft bgs Feet below ground surface
 ID Identification
 N/A Not applicable
 VOC Volatile organic compound

3.2.3 Quality Assurance/Quality Control Sampling

Field quality control (QC) sampling included a laboratory-supplied aqueous trip blank sample. Analytical data from the trip blank sample were referenced to determine whether contamination had been introduced during transportation of the containers and samples. Additional QC sampling consisted of collecting a field blank sample and equipment rinsate blank sample. The field blank sample was analyzed to assess field-introduced and laboratory-introduced contamination. The rinsate blank sample was analyzed to determine adequacy of decontamination procedures. One field duplicate sample was also submitted to determine total method precision. Table 1 above summarizes QC samples collected.

3.2.4 Decontamination

BGS decontaminated direct-push sampling equipment prior to first use and after sampling at each location. Decontamination consisted of thoroughly scrubbing the equipment with a non-phosphate detergent solution and rinsing the equipment with deionized water. Decontamination of additional sampling equipment was not necessary because all other sampling equipment was disposable.

3.2.5 Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of expendable sampling supplies, personal protective equipment (PPE), disposable tubing, and drill cuttings. Permanent monitoring well drill cuttings were containerized in clean 55-gallon drums and transported to the Metro Park West Landfill in Perry, Iowa, for disposal. All purge/development water was containerized in totes or polyethylene tanks, and sent for disposal at the City of Jefferson Water Department. Disposal of expendable sampling materials and PPE occurred as municipal solid waste.

4.0 ANALYTICAL DATA SUMMARY

During field activities from November 11 through 13, 2019, START collected groundwater samples to determine presence or absence of contaminants at the EPA Region 7 laboratory's achievable reporting/detection concentration limits. Samples were submitted for analysis to the EPA Region 7 laboratory in Kansas City, Kansas, on November 14, 2019. The following sections summarize analytical results from the PA. The analytical data package, including field sheets and chain-of-custody records, is in Appendix D.

4.1 GROUNDWATER SAMPLES

START collected six groundwater samples from temporary monitoring wells installed at two DPT boring locations: GW-03 and -06 (see Appendix A, Figure 3). Groundwater sampling was attempted at boring locations GW-01, -02, -04, and -05; however, the borings did not yield groundwater. Samples were analyzed for VOCs only.

Each of VOC analytes acetone, chloroform, methyl tert-butyl ether (MTBE), toluene, and 1,2,3-trichlorobenzene was detected at concentrations below its EPA MCL (or its Regional Screening Level [RSL] if an MCL had not been established). These analytes are either common laboratory contaminants or are commonly associated with fuel releases. No other VOCs were detected in any of the six groundwater samples collected. Table 2 summarizes analytical results from the groundwater samples.

4.2 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING

QC samples collected during the CERCLA Assessment included one aqueous trip blank sample, one field duplicate sample, one field blank sample, and one equipment rinsate blank sample.

The VOC analyte carbon disulfide was detected at concentration well below its RSL (no MCL had been established for carbon disulfide). No other VOCs were detected in any of the QC samples collected. Table 2 summarizes analytical results from the QC samples submitted to the EPA Region 7 laboratory.

TABLE 2

**SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED IN SAMPLES
DOWNTOWN WELLS SITE, JEFFERSON, IOWA**

Analyte	Regional Screening Levels	Sample Identification									
		8420-1	8420-2	8420-3	8420-4	8420-5	8420-6	8420-1-FD	8420-20-FB	8420-21-FB	8420-22
	MCL(µg/L)	GW-03 34-38	GW-03 24-28	GW-03 15-19	GW-06 47-51	GW-06 37-41	GW-06 22-26	GW-03 34-38	Trip Blank	Field Blank	Rinsate Blank
Acetone	1400 ^a	0.50 U	0.50 U	9.6 J	17 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80 ^b	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.1	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	81 ^a	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50	0.50 U	0.50 UJ	0.50 UJ
Ethylbenzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	45 ^a	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	14 ^a	0.50 U	0.50 U	0.50 U	0.50 U	0.83	0.61	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1,000	0.50 U	0.50 U	0.50 U	0.57	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	0.7 ^a	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.58	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p- Xylene	19 ^a	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
o- Xylene	19 ^a	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U

Notes:

^a No MCL for this analyte has been established. The benchmark listed is the RSL for tap water.^b MCL for total trihalomethanes.A sample result in **Bold** indicates concentration at or above reporting limit.

FB Field Blank
 FD Field Duplicate
 GW Groundwater
 J Identification of the analyte is acceptable; the reported value is an estimate.
 MCL Maximum Contaminant Level
 NA Not Applicable
 µg/L Micrograms per Liter
 U Analyte not detected at concentration at or above reporting limit
 UJ Analyte not detected at concentration at or above estimated reporting limit

5.0 DEVIATIONS FROM THE QAPP

The following deviations from the EPA-approved QAPP occurred, and were communicated to EPA PM and Task Monitor Brian Mitchell:

- On November 12, 2019, well installation activities for MW-3 were discontinued, and abandonment of MW-3 was completed on November 13, 2019. Decision to take these actions was based on the following: (1) conclusion by on-site geologists that the boring for MW-3 had not intersected any stratum likely capable of producing a quantity of groundwater adequate for sampling purposes, and also that such a stratum would not likely be encountered through further advancement of the boring; (2) absence of the Pleistocene Sand and Gravel Unit; and (3) approval from EPA PM and Task Monitor Brian Mitchell.
- DPT equipment refusal occurred before attainment of the target 65-foot sampling depth during drilling to establish temporary monitoring wells GW-01, -02, -03, -05, and -06. DPT equipment refusal occurred before attainment of the target 45-foot sampling depth during drilling to establish temporary monitoring wells GW-02 and -03.
- Because groundwater was not encountered in temporary monitoring wells GW-01, -02, -04, and -05, groundwater samples were not collected there.

6.0 CONCLUSIONS

The EPA Region 7 Superfund Division tasked START, under contract number 68HE0719D0001, Task Order 19F0086.003, to conduct CERCLA Assessment activities, including a PA of the Downtown Wells Site and an SI of the Former Electrolux Site, in Jefferson, Iowa (see Figure 1, Appendix A). CERCLA Assessment activities occurred during November 11 through 13, 2019. Primary components of the PA task were to conduct a review of the Downtown Wells Site to determine the top six sites likely to have contributed to the contamination found in downtown Jefferson municipal drinking water wells, and to install temporary monitoring wells near each of those six sites for collection of groundwater samples to undergo full VOC analysis. Primary components of the SI task were to install a permanent monitoring well near the former Electrolux facility, and to collect groundwater samples from the well for VOC analysis.

Over the course of the PA, START collected six groundwater samples at temporary monitoring well locations GW-03 and -06 for analysis for VOCs. Each of VOC analytes acetone, chloroform, methyl tert-butyl ether, toluene, and 1,2,3-trichlorobenzene was detected at concentration below its MCL (or RSL if no MCL had been established for that analyte). These analytes are either common laboratory contaminants or are commonly associated with fuel releases. No other VOCs were detected.

Based on data acquired during the PA, no facility-related contamination was found at the Downtown Wells Site sample locations. EPA advised START that further investigation should be conducted prior to completing the requested PA and SI reports. START subsequently conducted further historical research into potential source areas. Through a subsequent review of database listings compiled in an Area Corridor Report provided by Environmental Data Resources, Inc. (EDR), START identified five historical drycleaning facilities (see Figure 4, Appendix A) not included in the database listings previously obtained from EPA EnviroMapper for Envirofacts. Because DCE (a common degradation product of the dry cleaning solvent PCE) has been identified in three of four municipal water supply wells in the downtown area, and because the newly identified historical drycleaning facilities are relatively close to the contaminated downtown wells (distances ranging from approximately 85 to 1,435 feet), these five historical drycleaning facilities would be considered potential contributors to the contamination identified in Jefferson municipal drinking water wells 4, 6, and 9. Possibly warranted to determine presence or absence of contaminants at these five historical drycleaning facilities would be installation of four DPT temporary monitoring wells within city right-of-ways next to each of these sites (with two sites considered as one site cluster due to proximity), followed by sampling for VOCs.

START rotary sonic subcontractor Cascade advanced a borehole to 115 feet bgs for the proposed installation of permanent monitoring well MW-3 in the Pleistocene Sand and Gravel Unit used as the drinking water aquifer for Jefferson. However, this unit was not encountered, and the borehole was terminated at 115 feet bgs in Pennsylvanian shale bedrock. Because of failure to encounter either this aquifer or any other stratum capable of producing a quantity of groundwater adequate for sampling purposes, START discontinued well installation activities and began abandonment activities, which concluded on November 13, 2019.

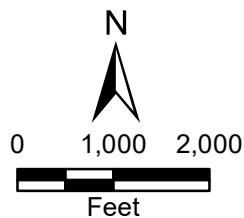
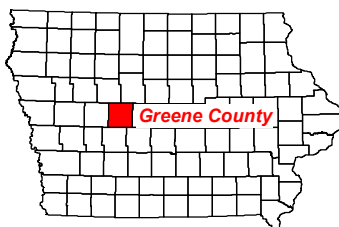
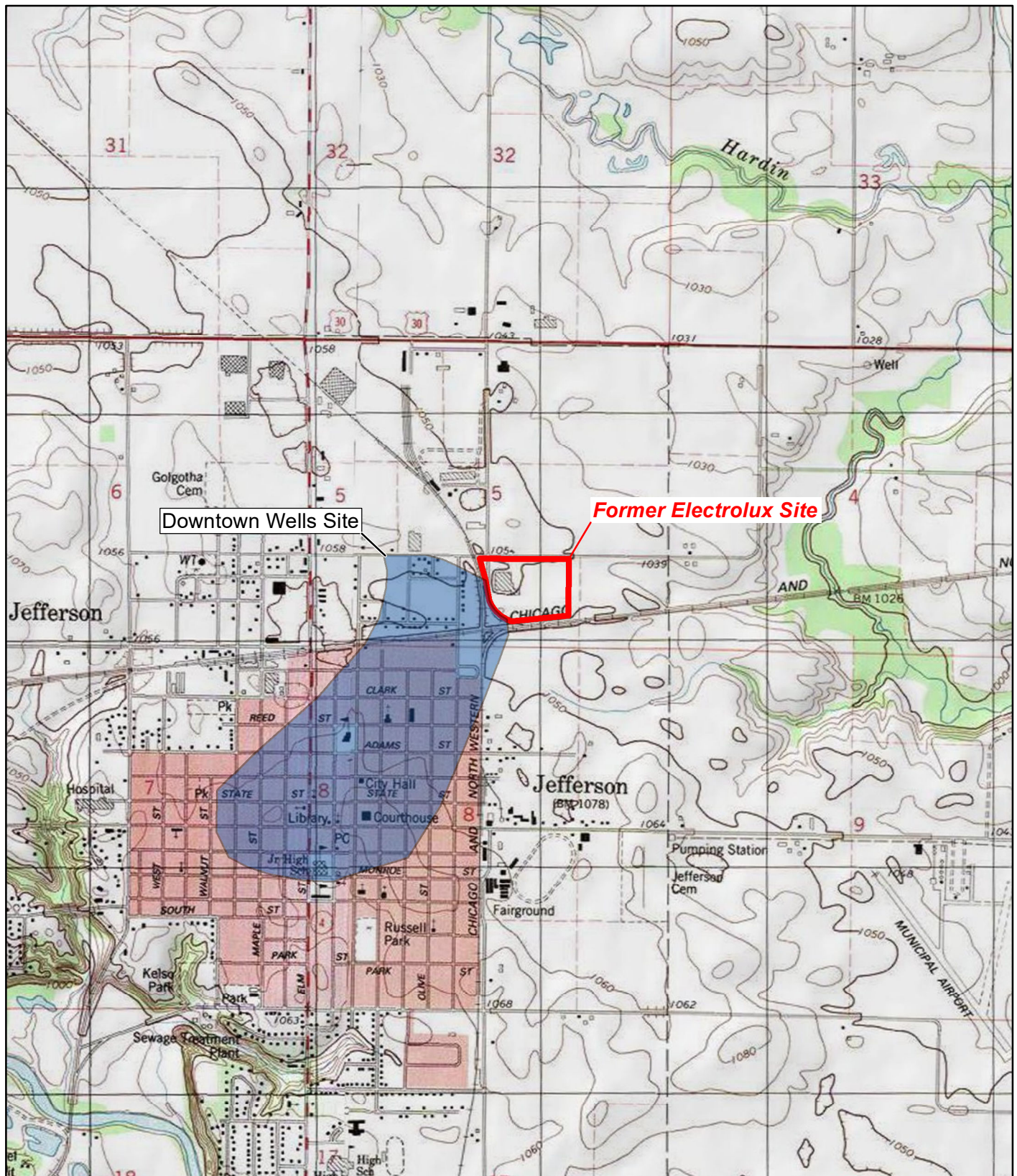
According to boring logs from advancement of the boring for MW-1 (approximately 870 feet southwest of the former Electrolux building), Pennsylvanian shale bedrock was encountered at 105 feet bgs, and the Pleistocene Sand and Gravel Unit was not encountered above bedrock (consistent with the boring for MW-3 [approximately 450 feet west-southwest of the former Electrolux building]). During advancement of the boring for MW-2 (approximately 2,480 feet south-southeast of the former Electrolux building), Pennsylvanian shale bedrock was encountered at 132 feet bgs, and bedrock was immediately preceded by a 30-foot-thick sand layer (Toeroek 2018). These observations were consistent with IDNR's estimated boundaries and depths of the drinking water aquifer for Jefferson presented in the Jefferson Groundwater Investigation report (IDNR 2013). An isopach map included in that report appears to show that thickness of the sand and gravel in the aquifer may trend in a north-south direction through Jefferson, and may trend east north of town. Based on the trend of thickness and the extent of the drinking water aquifer presented in the Jefferson Groundwater Investigation report, consistent with lithological observations by START during advancements of borings for MW-1, -2, and -3, the area south of MW-2 and east of the downtown municipal drinking water wells could be a suitable location for installation of a permanent monitoring well to be screened in the sand and gravel aquifer, and capable of producing a quantity of groundwater adequate for sampling with intent to determine presence or absence of facility-related contaminants in groundwater.

7.0 REFERENCES

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- Tetra Tech. 2019. Quality Assurance Project Plan, Revision 00. Prepared for U.S. Environmental Protection Agency (EPA) Region 7 under Contract No. 68HE0719D0001. October.
- Toeroek. 2017. Groundwater Sampling Event – Final Report of Findings, Rev. 01 – Former Electrolux, Inc. Facility, Jefferson, Iowa. September 30.
- Toeroek. 2018. Monitoring Well Installation and Groundwater Sampling Event – Final Report of Findings – Former Electrolux, Inc. Facility, Jefferson, Iowa. September 30.
- U.S. Geological Survey (USGS). 1986. Jefferson East, Iowa Quadrangle. 7.5-Minute Topographic Series.

APPENDIX A

FIGURES



Downtown Wells Site
and Former Electrolux Site
Jefferson, Iowa

Figure 1
Site Location Map



Source: Jefferson West, Iowa USGS 7.5 Minute Topo Quad, 1986;
Jefferson East, Iowa USGS 7.5 Minute Topo Quad, 1986.

Date: 10/1/2019





Drawn By: Rose Mcke

Project No: X003019F0086.003

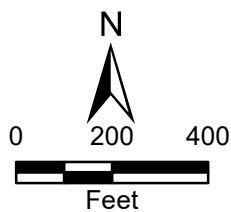
X:\G03010086\003\Project\med\Figure1_101019.mxd



Legend

-  Abandoned monitoring well location
-  Monitoring well location
-  Former Electrolux site
-  Former manufacturing area

Source: Esri, ArcGIS Online, World Imagery, 2018.



Former Electrolux Site
Jefferson, Iowa

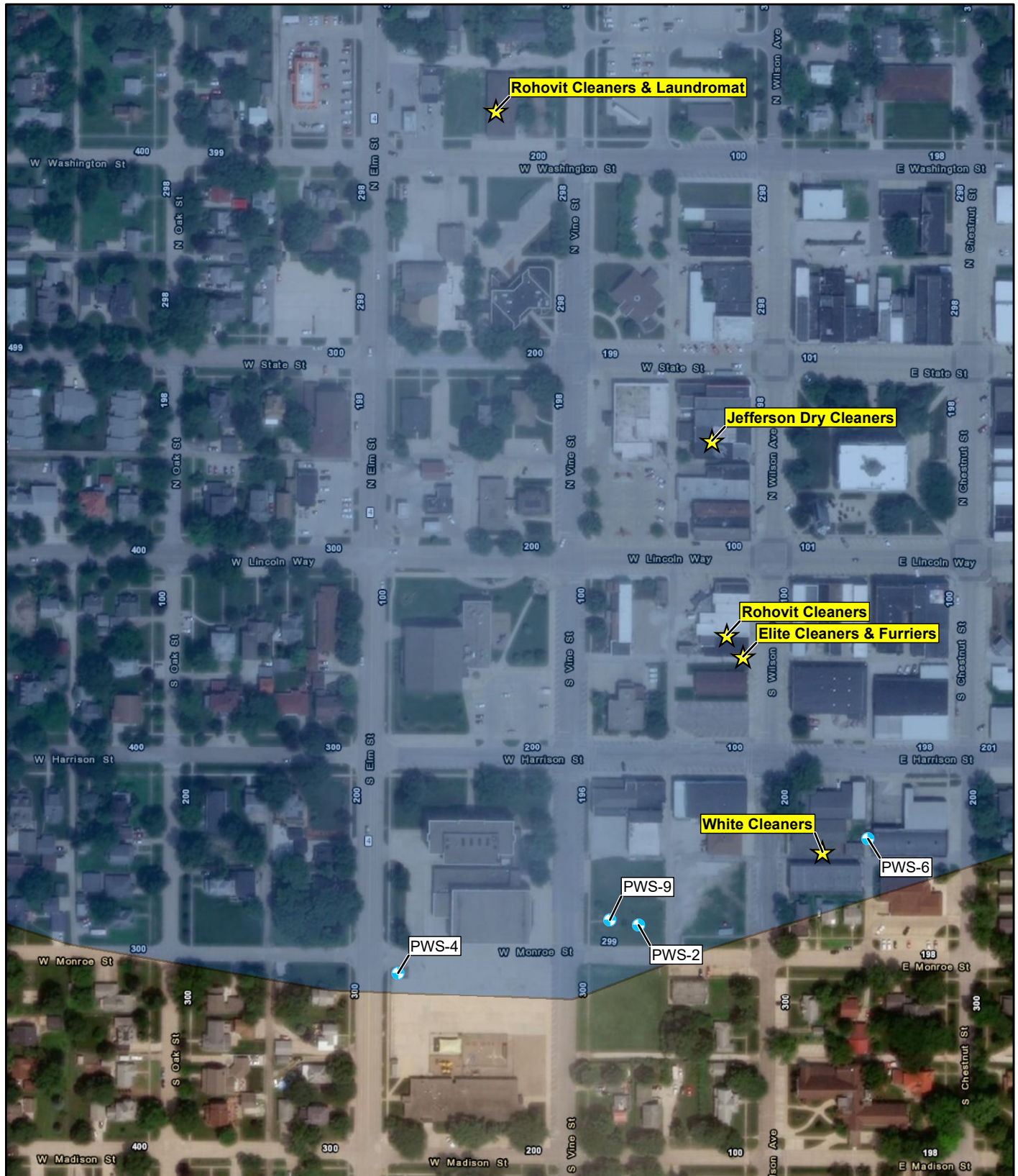
Figure 2 Monitoring Well Location Map



Date: 2/13/2020

Drawn By: Rose Micke

Project No: X903019F0086.003



Legend

★ Potential contamination source

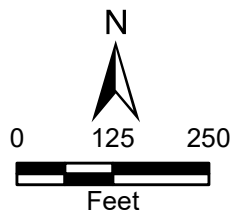
● PWS well location

■ Downtown wells site

EDR Environmental Data Resources, Inc.

PWS Public water supply

Source: Esri, ArcGIS Online, World Imagery, 2018.



Downtown Wells Site
Jefferson, Iowa

Figure 4 EDR Historical Drycleaners Map



Date: 2/13/2020

Drawn By: Nick Wiederholt

Project No: X903019F0086.003

X:\G90300086\003\Projected\mxd\Figure4.mxd

11-10-19

- 2030 - Departed Tetra Tech office for Jefferson, IA. for GW investigation near former Electrolyx Facility + Downtown Wells site.
- 0030 - Arrived in Jefferson, IA. Hotel

11-11-19

- 0700 - Tetra tech team included R. Slanczka, K. Thomas. Arrived onsite.
- 0745 - Cascade team arrived onsite, evaluated utility locate + weather, determined conditions were safe to proceed.
- Conducted tailgate safety meeting
- 0835 - L. Murphy of Tetra Tech arrived onsite
- 0850 - Began setup @ MW-
- 0930 - M. Graesch of IONR arrived onsite
- Began Drilling
- 1015 - R. Slanczka inspected ut. locates at Opt sites, confirmed at 1-4
- 1100 - Lunch
- 1200 - Resumed drilling
- 1430 - Reached 75' BGS, Cascade left site to determine arrangements for IDW water, will resume drilling Tuesday Morning.
- End of Day

Rite in the Rain

APPENDIX B
FIELD LOGBOOK

11-12-19

0800 - Arrived onsite to continue boring @ MW-3 on east side of Cedar street

- Weather Forecasted to be sunny, high of 21°F

0820 - Resumed boring at MW-3

0940 - BGS arrived at Downtown Wells Site

1016 - Began DPT boring at GW-01, just north of intersection of Chestnut + Harrison

1045 - Tetra Tech staff + IDNR staff determined that bed rock had been reached at MW-3 and no zones existed from which to collect GW.

1100 - B. Mitchell approved abandoning MW-3, instructed Tetra Tech to coordinate with IDNR to propose a new location for MW-3 based on existing data for the area.

1115 - Instructed Cascade to begin abandoning current MW-3 boring.

1130 - Tetra Tech staff returned to GW-01.

1145 - BGS reached refusal at 57' depth.

Drillers conveyed there were no zones to that point that would produce GW judging by the level of effort to push through substrate, + water level indicator.

1215 - Intervals between 14' - 27' were checked for GW with a water level indicator, no GW was identified.

1220 - Lunch

1315 - Began boring at GW-04

1400 - Reached refusal at 66' depth

- R. Slanczka met with Jefferson Water Dept. officials to adjust loc. of boring GW-02

1432 - GW not encountered at GW-04

1450 - Began boring at GW-02

1500 - R. Slanczka met with Jefferson city official Nick Sorenson to receive ROW Permit

1515 - Reached refusal at GW-02 at 45' 41' depth

1630 - BGS attempted to find GW at each 5' interval, but GW was not encountered. Will resume DPT activities beginning at GW-03 on Wednesday morning.

- End of day

11-13-19

- 0800 - Arrived onsite at GW-03
 - Weather forecasted to snow, high of 32°F
- 0831 - Began boring at GW-03
- 0857 - Reached refusal at 38' depth.
- 1000 - Screen at 34' - 38'
 - Collected sample 8420-1 + MS/MSD + 8420-FD, pulled up to 28'
- 1100 - Screen at 24' - 28'
 - collected sample 8420-2
- 1130 - Screen at 15' - 19'
 - collected sample 8420-3
- 1140 - Moved to GW-05
- 1215 - Began boring at GW-05
- 1245 - Reached refusal at 52' depth.
- 1353 - GW not encountered
- 1400 - Moved to GW-06
- 1408 - Began boring at GW-06
- 1441 - Reached refusal at 51' depth
 - Screen at 47' - 51' ?
- 1520 - collected sample 8420-4
- 1540 - Screen at 37' - ~~41~~ 11'
 - Collected sample 8420-5
- 1600 - Screen at 22' - 26'
 - collected sample 8420-6
- 1612 - Collected Rinsate Blank

- 1633 - Departed site for Tetra Tech office
- 2045 - Arrived at Tetra Tech office
 - End of day

APPENDIX C
PHOTOGRAPHIC LOG

Downtown Wells Site and Former Electrolux Site Jefferson, Iowa



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows the Gus Pech® truck-mounted rotary sonic drill rig at the location of the borehole for permanent monitoring well MW-3.	1
			Date
Direction: Southeast	PHOTOGRAPHER	Ryan Slanczka	11/11/2019



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows personnel from the Superfund Technical Assessment and Response Team (START) and Iowa Department of Natural Resources (IDNR) recording lithological observations of a soil core from drill cuttings.	2
			Date
Direction: West-southwest	PHOTOGRAPHER	Ryan Slanczka	11/12/2019

Downtown Wells Site and Former Electrolux Site Jefferson, Iowa



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows the Direct-Push Technology (DPT) Geoprobe® at the location of temporary monitoring well GW-01.	3
			Date
Direction: North-northeast	PHOTOGRAPHER	Ryan Slanczka	11/12/2019



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows the DPT Geoprobe® at the location of temporary monitoring well GW-04.	4
			Date
Direction: North-northeast	PHOTOGRAPHER	Ryan Slanczka	11/12/2019

Downtown Wells Site and Former Electrolux Site Jefferson, Iowa



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows the DPT Geoprobe® at the location of temporary monitoring well GW-02.	5
			Date
Direction: South	PHOTOGRAPHER	Ryan Slanczka	11/12/2019



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows the DPT Geoprobe® at the location of temporary monitoring well GW-05.	6
			Date
Direction: North	PHOTOGRAPHER	Ryan Slanczka	11/13/2019

Downtown Wells Site and Former Electrolux Site Jefferson, Iowa



TETRA TECH PROJECT NO. 103X903019F0086.003	DESCRIPTION	This photograph shows the DPT Geoprobe® at the location of temporary monitoring well GW-06.	7
			Date
Direction: North	PHOTOGRAPHER	Ryan Slanczka	11/13/2019

APPENDIX D
EPA ANALYTICAL DATA

**United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101**

Date: 12/17/2019

Subject: Transmittal of Sample Analysis Results for ASR #: 8420

Project ID: BMFESDWS

Project Description: Downtown Wells site and Former Electrolux site

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch
Laboratory Services and Applied Sciences Division

To: Brian Mitchell
LCARD/ROAG

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic (.pdf only) transmittal in your records management system. The Regional Laboratory will now retain all of the original hardcopy documentation (e.g. COC[s] and the R7LIMS field sheet[s], etc.) according to our LSASD records management system.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey. It is critical that we receive your response in accordance to RCRA and the laboratory accreditation.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Project Manager: Brian Mitchell**Org:** LCARD/ROAG**Phone:** 913-551-7633**Project ID:** BMFESDWS**QAPP Number:** PERPM11/5/19**Project Desc:** Downtown Wells site and Former Electrolux site**Location:** Jefferson**State:** Iowa**Program:** Superfund**Site Name:** Multi-Site - General**Site ID:** 07ZZ **Site OU:** 00**Purpose:** Site Preliminary Assessment**GPRA PRC:** 000DD2

CERCLIS ID: IAD047055140. GW sampling for preliminary assessment and site investigation.

EPA PM (BM)/TT sampler noted on the submitted ASR dated 10/9/2019 that this activity is not part of a litigation hold activity at this time.

GPRA/site code (+OU) ok per JN on 10/9/19.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

Units: Specific units in which results are reported.

___ = Field Sample

ug/L = Micrograms per Liter

FB = Field Blank

FD = Field Duplicate

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

J = The identification of the analyte is acceptable; the reported value is an estimate.

U = The analyte was not detected at or above the reporting limit.

ASR Number: 8420**Sample Information Summary****12/17/2019****Project ID:** BMFESDWS**Project Desc:** Downtown Wells site and Former Electrolux site

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 - ____		Water	GW-03 (34-38)		11/13/2019	10:00			11/14/2019
1 - FD		Water	GW-03 (34-38)		11/13/2019	10:00			11/14/2019
2 - ____		Water	GW-03 (24-28)		11/13/2019	11:00			11/14/2019
3 - ____		Water	GW-03 (15-19)		11/13/2019	11:30			11/14/2019
4 - ____		Water	GW-06 (47-51)		11/13/2019	15:20			11/14/2019
5 - ____		Water	GW-06 (37-41)		11/13/2019	15:40			11/14/2019
6 - ____		Water	GW-06 (22-26)		11/13/2019	16:00			11/14/2019
20 - FB		Water	LDL VOA Trip Blank sample		11/13/2019	12:00			11/14/2019
21 - FB		Water	LDL VOA Field Blank sample		11/13/2019	13:00			11/14/2019
22 - ____		Water	Rinsate sample		11/13/2019	16:12			11/14/2019

Analysis Comments About Results For This Analysis

1 VOCs in Water by GC/MS for Low Detection Limits**Lab:** Contract Lab Program (Out-Source)**Method:** CLP Statement of Work**Samples:** 1-__ 1-FD 2-__ 3-__ 4-__ 5-__ 6-__
 20-FB 21-FB 22-__**Comments:**

Carbon Disulfide was UJ-coded in samples -21FB and -22. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration curve not meeting linearity specifications. The actual reporting limit may be higher than the reported value.

Ethyl Benzene, Isopropylbenzene, Styrene, Tetrachloroethene, Toluene, Trichloroethene, o-Xylene and m and/or -Xylene were UJ-coded in sample -6. These analytes were not found in the sample at or above the reporting limit; however, the reporting limits are an estimate (UJ-coded) due to low recovery of a surrogate analyte. The actual reporting limits for these analytes may be higher than the reported values.

Acetone was J-coded in samples -3 and -4. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of a surrogate analyte in these samples. The actual concentration for this analyte may be lower than the reported values.

Analysis/ Analyte	Units	1-__	1-FD	2-__	3-__
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	9.6 J
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

ASR Number: 8420

RLAB Approved Sample Analysis Results

12/17/2019

Project ID: BMFESDWS

Project Desc: Downtown Wells site and Former Electrolux site

Analysis/ Analyte	Units	1-__	1-FD	2-__	3-__
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	4-__	5-__	6-__	20-FB
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	17 J	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	1.1	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.83	0.61	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Toluene	ug/L	0.57	0.50 U	0.50 UJ	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.58	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

ASR Number: 8420

RLAB Approved Sample Analysis Results

12/17/2019

Project ID: BMFESDWS

Project Desc: Downtown Wells site and Former Electrolux site

Analysis/ Analyte	Units	4-__	5-__	6-__	20-FB
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U

Analysis/ Analyte	Units	21-FB	22-__
1 VOCs in Water by GC/MS for Low Detection Limits			
Acetone	ug/L	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 UJ	0.50 UJ
Carbon Tetrachloride	ug/L	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U

ASR Number: 8420

RLAB Approved Sample Analysis Results

12/17/2019

Project ID: BMFESDWS

Project Desc: Downtown Wells site and Former Electrolux site

Analysis/ Analyte	Units	21-FB	22-__
Trichloroethene	ug/L	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

EPA PROJECT MANAGER (Print) <u>Brian Mitchell</u>	SITE OR SAMPLING EVENT <u>Downtown Wells Site</u>	DATE OF SAMPLE COLLECTION(S) MONTH <u>11</u> DAY <u>13</u> YEAR <u>19</u>	SHEET <u>1</u> of <u>1</u>
--	--	--	-------------------------------

CONTENTS OF SHIPMENT

ASR AND SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA				RECEIVING LABORATORY REMARKS OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	1 L PLASTIC BOTTLE	BOTTLE	BOTTLE	BOTTLE	VOA SET (3 VIALS EA)	WATER	SOLID	HAZ WASTE	OTHER	
	NUMBER(S) OF CONTAINERS PER SAMPLE NUMBER									
8420 - 1					3	X				MS/MSD
8420 - 1-FD					1	X				Field Duplicate
8420 - 2					1	X				
8420 - 3					1	X				
8420 - 4					1	X				
8420 - 5					1	X				
8420 - 6					1	X				
8420 - 20-FB					1	X				Field Blank Trip Blank
8420 - 21-FB					1	X				Field Blank
8420 - 22-					1	X				Rinsate Blank
<div style="font-size: 4em; transform: rotate(-30deg); opacity: 0.5;">Complete</div>										A few vials had very small air bubbles + some sediment in vials. Lab informed to note + process accordingly. 11/14/19
										Ctr. Temp. Rec'd bet. 0-1 °C 11/14/19

DESCRIPTION OF SHIPMENT <u>12</u> CONTAINER(S) CONSISTING OF _____ CRATE(S) <u>1</u> ICE CHEST(S): OTHER _____	MODE OF SHIPMENT _____ COMMERCIAL CARRIER _____ <u>X</u> SAMPLER CONVEYED _____ (SHIPPING AIRBILL NUMBER)
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PERSONNEL CUSTODY RECORD

RELINQUISHED BY (PM/SAMPLER) <u>[Signature]</u>	DATE <u>11/14/19</u>	TIME <u>1600</u>	RECEIVED BY <u>[Signature]</u>	DATE <u>11/14/19</u>	TIME <u>1600</u>	REASON FOR CHANGE OF CUSTODY <u>Lab Analysis</u>
<input type="checkbox"/> SEALED <input checked="" type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input checked="" type="checkbox"/> UNSEALED			
RELINQUISHED BY (PM/SAMPLER)	DATE	TIME	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			
RELINQUISHED BY (PM/SAMPLER)	DATE	TIME	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			
RELINQUISHED BY (PM/SAMPLER)	DATE	TIME	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 1 **QC Code:** ~~82~~^{gm} **Matrix:** Water **Tag ID:** 8420-1-~~82~~^{gm}

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-03 (34-38) gm (34-38)
(24-28)
External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 11/13/11 18:00
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

✓ w 11/14/11
Collected MS/MSD Volume & Filed Duplicate

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** ~~19~~ ^{1 fm} **QC Code:** ~~ED~~ ^{fm} **Matrix:** Water **Tag ID:** 8420-~~19~~ ^{1 - FO}

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-03 (34-38)

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 11/13/11

10:00

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 2 **QC Code:** ____ **Matrix:** Water **Tag ID:** 8420-2-____

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-03 (24-28)

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 11/13/19 11:00
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 3 **QC Code:** ____ **Matrix:** Water **Tag ID:** 8420-3-____

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-03 (15-19)

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 11/13/19 11:30
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 4 **QC Code:** ____ **Matrix:** Water **Tag ID:** 8420-4-____

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-06 (47-51)

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ____

Sample Collection: Start: 11/13/19

15:20

Longitude: ____

End: ____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 5 **QC Code:** ____ **Matrix:** Water **Tag ID:** 8420-5-__

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-OG (37-41)

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ____

Sample Collection: Start: 11/13/19 15:40

Longitude: ____

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 6 **QC Code:** ____ **Matrix:** Water **Tag ID:** 8420-6-____

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: GW-OG (22-26)

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 11/13/19 16:00

Longitude: _____

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 20 **QC Code:** FB **Matrix:** Water **Tag ID:** 8420-20-FB

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: LDL VOA Trip Blank sample

External Sample Number: Trip Blank

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 11/13/19 12:00
Longitude: _____ **End:** 1/1 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

Prepared by the LTAB. Provided & left in the dock refrig. at the STC for the TT/START sampler to retrieve, take to the sampling site, label each vial & outside of the pouch with the LIMS provided sample tags and submit with the field sample(s) & COC(s) for this ASR.

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 21 **QC Code:** FB **Matrix:** Water **Tag ID:** 8420-21-FB

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: LDL VOA Field Blank sample

External Sample Number: Field Blank

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude:

Sample Collection: Start: 11/13/19 13:00

Longitude:

End:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

Prepared by the TT field sampler to label each vial & outside of the pouch with the LIMS provided sample tags and submit with the field sample(s) & COC(s) for this ASR.

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 8420 **Sample Number:** 22. **QC Code:** ____ **Matrix:** Water **Tag ID:** 8420-22-~~QB~~

Project ID: BMFESDWS **Project Manager:** Brian Mitchell
Project Desc: Downtown Wells site and Former Electrolux site
City: Jefferson **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: Rinsate sample

External Sample Number: Rinsate Blank

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 11/13/19 16:12
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

NO QC code for rinsate samples. Leave as field sample (do not collect extra volume for QC=MS/MSD on this sample).

Sample Collected By: TT/START

APPENDIX E

BORING LOGS

Boring Log Form

Site Name: Former Electrolux

Boring Number: MW-3

Date Drilled (Start/Finish): 11/11/2019

Drilling Method: Rotary Sonic

Drilling Company: Casacade

Elevation: ~ 1050ft amsl

Total Depth: 120ft

Coordinates:

Depth to Water:

Geologist: L. Murphy, K. Thomas

Project Number: 103X903019F0086.003

Weather: 15°, Flurries, Wind 30mph

Sample Interval	Interval	Soil Recv.	PID Reading (ppm or ppb)	Depth (Feet)	Color (Munsell or Rock)	Lithology	Graphic Log	Description and Remarks
								TOPSOIL
				5		CL/ML		CLAY, silty, Okoboji member, black, damp; transitioning to SILT, clayey, tan brown, trace amounts very fine grained sand, moist.
						SC/SM		SAND, silty, clayey, Pilot Knob Outwash, tan orange, well graded, fine to coarse grade, increasing coarseness with depth; wet.
				10				CLAY, silty, with trace amounts of gravel, Des Moines Lobe, grey brown with iron mottling, moderately plastic; moist.
				15		CL/ML		CLAY, as above, becoming more grey.
						SC		SAND, clayey, grey brown, coarse grained, increasing clay content with depth; wet.
				20				CLAY, silty, sandy, till, medium becoming dark grey, plastic, soft; moist.
				25		CL/ML		CLAY till, silty, trace amounts of very fine grained sand, some small gravel, soft, plastic; moist.
				30				CLAY till, as above, with increasing stiffness, becoming moderately plastic.

Boring Log Form

Site Name: Former Electrolux

Boring Number: MW-3

Date Drilled (Start/Finish): 11/11/2019

Drilling Method: Rotary Sonic

Drilling Company: Casacade

Elevation: ~ 1050ft amsl

Total Depth: 120ft

Coordinates:

Depth to Water:

Geologist: L. Murphy, K. Thomas

Project Number: 103X903019F0086.003

Weather: 15°, Flurries, Wind 30mph

Sample Interval	Interval	Soil Recv.	PID Reading (ppm or ppb)	Depth (Feet)	Color (Munsell or Rock)	Lithology	Graphic Log	Description and Remarks
				35		CL/ML		CLAY, till, silty, medium grey, with small gravel and trace amounts of very fine grained sand, stiff, non-plastic, crumbly texture; damp.
				40		CL/ML		CLAY, till, tan becoming grey tan, with small gravel, very stiff, non-plastic, increasing moisture with depth; moist.
				45		SW		SAND, orange tan, well graded very fine to coarse grained with gravel, transitioning to poorly graded fine to medium grained; damp.
				50		SW/SC		SAND, as above, becoming clayey, transitioning to grey tan with iron mottling.
				55		CL/ML		CLAY, till, sandy, medium grey, coarse grained with small gravel, very stiff, damp; thin black organic rich layer free of clasts from 52.5 to 53 ft.
				60				

Boring Log Form

Site Name: Former Electrolux

Boring Number: MW-3

Date Drilled (Start/Finish): 11/11/2019

Drilling Method: Rotary Sonic

Drilling Company: Casacade

Elevation: ~ 1050ft amsl

Total Depth: 120ft

Coordinates:

Depth to Water:

Geologist: L. Murphy, K. Thomas

Project Number: 103X903019F0086.003

Weather: 15°, Flurries, Wind 30mph

Sample Interval	Interval	Soil Recv.	PID Reading (ppm or ppb)	Depth (Feet)	Color (Munsell or Rock)	Lithology	Graphic Log	Description and Remarks
						CL/ML		CLAY, till, sandy, medium grey, coarse grained with small gravel, very stiff; damp.
						SP		SAND, grey, medium grained, poorly graded; moist.
				65		CL/ML		CLAY, till, sandy, grey, very stiff; damp.
				70				
				75		CL/SC		CLAY, till, sandy with small gravel, grey with iron mottling transitioning to tan brown, increasing sand content with depth; stiff becoming very stiff; damp.
				80				
				85		SP		SAND, tan, fine grained, poorly graded, increasing coarseness with depth; damp.
				90		CL/ML		CLAY, till, tan brown with iron mottling, stiff; damp.

Boring Log Form

Site Name: Former Electrolux

Boring Number: MW-3

Date Drilled (Start/Finish): 11/11/2019

Drilling Method: Rotary Sonic

Drilling Company: Casacade

Elevation: ~ 1050ft amsl

Total Depth: 120ft

Coordinates:

Depth to Water:

Geologist: L. Murphy, K. Thomas

Project Number: 103X903019F0086.003

Weather: 15°, Flurries, Wind 30mph

Sample Interval	Interval	Soil Recv.	PID Reading (ppm or ppb)	Depth (Feet)	Color (Munsell or Rock)	Lithology	Graphic Log	Description and Remarks
								CLAY, till, tan brown with iron mottling, stiff; damp.
				95		CL/ML		CLAY, as above, transitioning to grey, with trace amount of very fine grained sand, and small gravel beginning at 93 ft.
				100				CLAY, till, with trace amounts of coarse grained sand and small gravel, grey becoming dark grey, moderately plastic; damp.
				105				
				110				SHALE, slightly sandy, light grey, very weathered crumbly texture; damp.
				115		SHALE		
				120				SHALE, grey, micaceous; dry.

APPENDIX F
MONITORING WELL RECORD FORM

WELL RECORD FORM

DNR Form
542-8170

APPENDIX G
BUILDING PERMIT APPLICATION

CITY OF JEFFERSON - BUILDING PERMIT APPLICATION

Building Permit No. 64-19

The undersigned hereby makes application with the Building Official of the City of Jefferson, Iowa for a permit to **Erect, Reconstruct or Alter** at the address described on this application.

There is to be made a part of this application, on the **Plot Plan Form**, a scale drawing of the outline of the proposed structure in relation to the lot lines and all required dimensions of the lot and proposed structure. Before a building permit is issued, the proposed structure and lot lines must be staked and string lined so all yard requirements can be verified.

Issuance of this Building Permit will be made solely upon the representation of the undersigned applicant. The City of Jefferson assumes no responsibility for the accuracy of the information furnished, including, but not limited to, the location of property lines. The City of Jefferson retains the right to revoke a permit invalidly issued. Further, the City of Jefferson assumes no responsibility for the consequences of a permit invalidly issued, including any rights, which may accrue to adjoining property owners and other affected citizens. Applicant further states that they are familiar with the Zoning Ordinance of the City of Jefferson and that said structure will be used for the purpose herein stated and no other. **The applicant hereby acknowledges that he/she has been informed that the State of Iowa has adopted Building Codes and that compliance with all applicable Codes is a State Law and the applicant's sole responsibility. Applicants must comply with Federal, State and local erosion control regulations.**

All commercial buildings must meet ADA Requirements. **Iowa State Plumbing Code prohibits the drainage of storm water into sewers intended for sanitary sewage use only.**

Permit Required: A permit shall be obtained before beginning construction, alteration or repairs, other than ordinary repairs. Ordinary repairs are nonstructural repairs including painting, wall finishes, roof coverings, exterior siding replacement, repairs to plumbing, mechanical and electrical systems. A permit is required for the construction of: a new building, addition, alteration, repair or replacement, garage, accessory building, deck, porch, fences and signs. A permit is also required for: driveways, sidewalks, water and sewer service connections, excavation on any city property or city right of way, moving or relocating an existing building or structure within the corporate limits of the City of Jefferson.

Permit Application: It is very important to complete the application in detail, so that it can be processed in a timely manner. Verifying zoning requirements and permit processing may take 2 to 5 business days. You will be contacted when your permit is ready.

Iowa law requires that all owners and occupants of homes built before 1978 are informed about **LEAD-BASED PAINT** before you *renovate, remodel, or repaint*. Contact the Iowa Department of Public Health at 800-972-2026 for additional information and forms.

Diggers Hotline 1-800-292-8989

Call at least 48 hours in advance, when digging.

If you have any questions, please contact the Jefferson Building Inspection Office.

Building Inspection Office
220 N Chestnut Street
Jefferson, IA 50129

Phone: 515-386-4660
Fax: 515-386-4671
Email: bicjeff@netins.net

BUILDING PERMIT APPLICATION

Owner

c/o Brian Mitchell

Name: U.S. Environmental Protection Agency
 Address: 11201 Renner Boulevard
 City, State & Zip: Lenexa, KS 66219-9601

Phone: 913-551-7633
 Mobile: _____
 Fax: _____

Contractor

Name: Tetra Tech, Inc. c/o Ryan Slanczka
 Address: 415 Oak Street
 City, State & Zip: Kansas City, MO 64106

Phone: 816-412-1770
 Mobile: _____
 Fax: 816-410-1748

Project Location

Address: See Map

Estimated Total Cost of Project: \$ 100,000 (labor and materials)

Legal Description: Lot(s): _____ Block: _____ Subdivision: _____

Unplatted Legal Description

Improvement Type:

- | | | |
|--|---|--|
| <input type="checkbox"/> New Building | <input type="checkbox"/> Addition | <input type="checkbox"/> Alteration-Repair-Replacement |
| <input type="checkbox"/> Garage-Accessory Building | <input type="checkbox"/> Deck-Porch | <input type="checkbox"/> Fence |
| <input type="checkbox"/> Sign | <input type="checkbox"/> Water-Sewer Service Connect. | <input checked="" type="checkbox"/> Excavate City ROW/Property |
| <input type="checkbox"/> Sidewalk-Driveway | | |
| <input type="checkbox"/> Other (specify) | | |

Brief description of project: Installation of one permanent and six temporary monitoring wells for EPA in city right-of-way / Property.

Project Information (Check all that apply)

Type of siding material: ☐ Wood ☐ Steel ☐ Masonry ☐ Other: _____

Construction Type: ☐ Wood Frame ☐ Steel Frame ☐ Masonry ☐ Other: _____

Floor Area: 1st Floor _____ sq. ft. 2nd Floor _____ sq. ft. 3rd Floor _____ sq. ft.

Basement: Finished _____ sq. ft. Unfinished _____ sq. ft.

Heating System: ☐ Electric ☐ Gas ☐ Combination Elec./Gas ☐ Geo-Thermal

Water Heater: ☐ Electric ☐ Gas ☐ Other _____

Water Service: ☐ City Service ☐ Rural Service ☐ Well

Sewer System: ☐ City Service ☐ Septic (Obtain state permit from County Sanitation Official)

Electrical System: ☐ 100 amp ☐ 200 amp ☐ other _____ amp

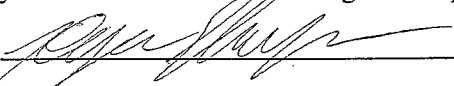
Temporary Electric: ☐ Yes ☐ No

BUILDING PERMIT APPLICATION

I hereby certify that the data submitted on or with this application is true and correct, that I am the owner at this address or, that for the purpose of obtaining this approval, am acting as agent in owners' behalf. **Contractors who are registered with the Secretary of State, State of Iowa, and who carry Contractors Commercial Liability Insurance of not less than \$500,000.00 will perform all work done on this project.** When approved and numbered, this application becomes a permit to build. Granting of this permit does not presume to give authority to violate or cancel the provisions of any state or local law regulating construction or the performance of construction. This permit expires if the work is not commenced within six months from the date of issue, or if the work is not completed within one year from the date of issuance. In the discharge of duties, the Building Inspector shall have the authority to enter the building, structure or premises for the purpose of inspecting the work permitted and posting notices.

I also certify that the Plot Plan attached hereto is a true representation of this lot and accurately shows all dimensions, easements, proposed and existing structures on said lot. Any deviation from this approved Plot Plan may void the related building permit, zoning approvals or waivers. I further state that all property lines have been located by myself or by a legal surveyor for the lot located at the legal description noted on this application.

Signature



Date

11/1/2019

Print Name

Ryan Slanczka

Building Inspection Office use only.

Building Permit No.

64-19

Building permit fees to be collected:

Zoning

Type of improvement:

New Building

Fee Based on Construction Cost

Addition

Fee Based on Construction Cost

Alteration, Repair or Replacement

Fee Based on Construction Cost

Garage - Accessory Building

Fee Based on Construction Cost

Deck - Porch

Fee Based on Construction Cost

☐ Building

(total of projects listed above)

Fee:

☐ Fence

\$20.00

Fee:

☐ Sign

\$20.00

Fee:

☐ Driveway/Sidewalk

\$20.00

Fee:

☐ Demolition

\$20.00

Fee:

☐ House Movers

\$20.00

Fee:

☐ Curb Cutting

\$20.00

Fee:

Service connections required - Permit Fees

☐ Water Service Line Permit

\$50.00

Fee:

☐ Sewer Service Line Permit

\$50.00

Fee:

☐ Water System Hookup

\$1000.00

Fee:

☐ Sewer System Hookup

\$(Variable)

Fee:

☒ Right-of-way excavation

\$20.00

Fee:

140.00

☐ Other (specify _____)

Fee:

TOTAL

\$ 140.00

Permit: ☒ Issued☐ Denied

Building Official

Date:

11/12/19

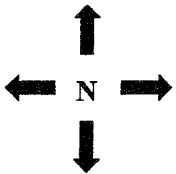
CITY OF JEFFERSON – PLOT PLAN FORM

Building Permit Number: 64-19

Project Location

Address: _____

See attached map locations



NOTE: It is the responsibility of the applicant to call for utility locations before any excavation or digging. (1-800-292-8989)

Boring Locations - Downtown

Legend
☐ Proposed Temporary Wells

Google Earth
 © 2018 Google

1000 ft

☐ Proposed Temporary Wells☐ Proposed Temporary Wells

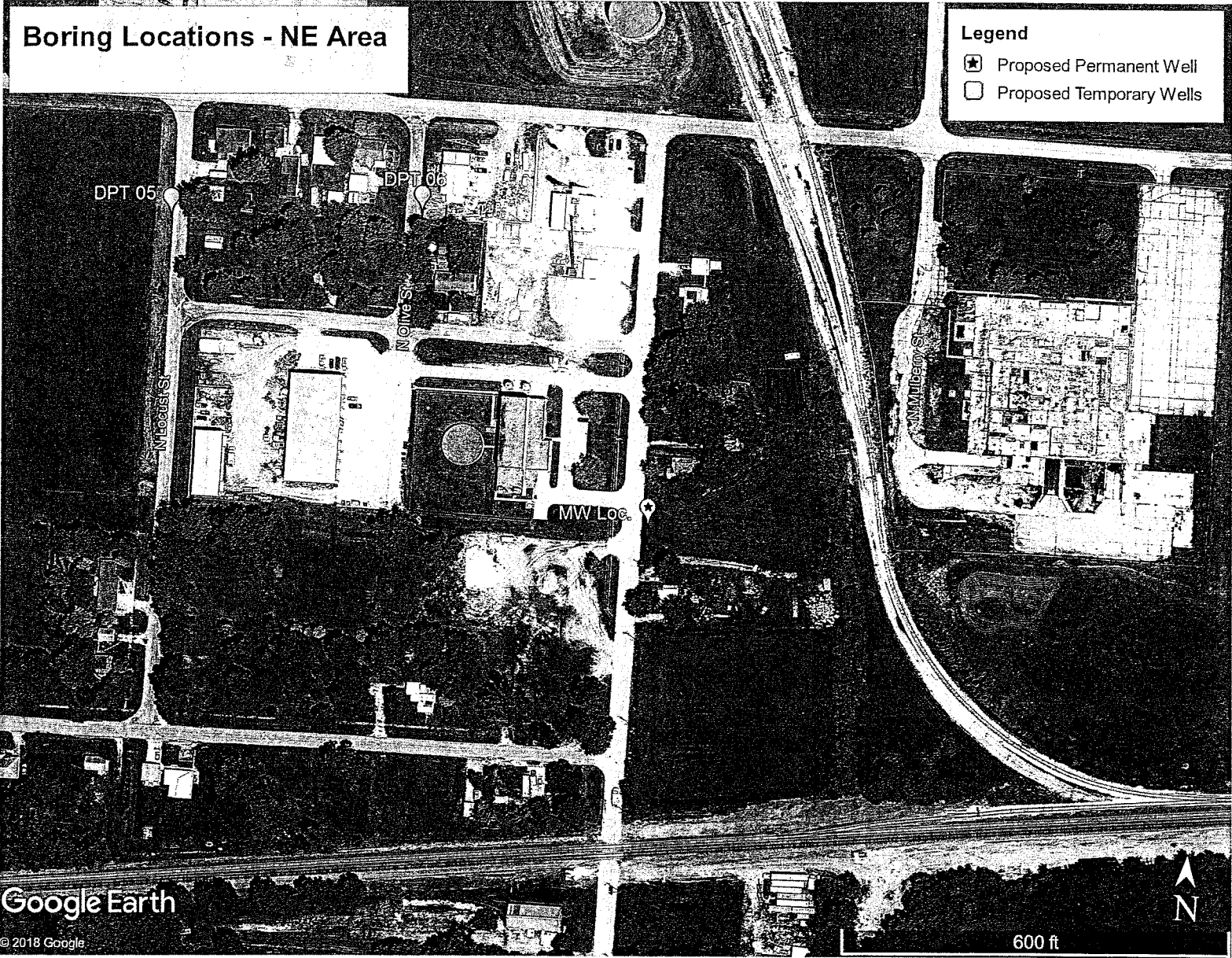
Google Earth

© 2018 Google

1000 ft

Boring Locations - NE Area

- Legend
- Proposed Permanent Well
 - Proposed Temporary Wells



BUILDING PERMIT APPLICATION

Building Official Office use only.Building Permit No. 64-19Zoning —**Final Inspection Signatures (if applicable)**

Y/N Building Official _____ Date _____ Approved ☐
Denied ☐
Nick Sorensen 386-4660

Y/N Water Superintendant _____ Date _____ Approved ☐
Denied ☐
Tom Schilling 386-2611

Y/N Sewer Superintendant _____ Date _____ Approved ☐
Denied ☐
Dan Moranville 386-4711

Y/N Street Superintendant _____ Date _____ Approved ☐
Denied ☐
Dave Teeples 386-3252

Actual Project Cost \$ _____
Initial Estimated Cost \$ _____
Total Amount Due or \$ _____
Credited \$ _____